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United States General Accounting Office

Briefing Report to the Chairman, Committee on Veterans' Affairs, House of Representatives

August 1986

COMPUTER SYSTEMS

VA's Target Project Never Achieved Redesign of its Processing Software

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GAO

United States
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Information Management and
Technology Division

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August 21, 1986

The Honorable G. V. (Sonny) Montgomery
Chairman, Committee on Veterans' Affairs
House of Representatives

Dear Mr. Chairman:

In response to your request, we have reviewed the Veterans Administration's (VA) Compensation and Pension Benefit Payment System. Specifically, you asked us to review the extent to which this system was modernized under the Target project, VA's modernization program for its Compensation, Pension, and Education systems. The attached briefing report contains our detailed analysis.

VA initiated the Target project in 1972 to improve service and operations by automating manual functions and upgrading outdated automation processes. The original plans for the Target project called for two major activities that cost about $50 million. The activities were: (1) the automation of the claims authorization and inquiry functions in the 58 regional offices, and (2) the redesign of the claims processing software at the Hines, Illinois, data processing center. Prior to the Target project's implementation, its estimated cost escalated to $100 million.

Regarding the degree of modernization accomplished under the Target project, we found that, between 1977 and 1980, VA developed a telecommunications network and installed computer terminals in its regional offices. This enabled electronic development and transmission of claims data for processing and faster response to veterans' inquiries. The second activity, redesigning the claims-processing software, was not accomplished. Consequently, the agency has not realized some of its major benefits from the Target project, such as (1) daily processing of claims, (2) controls over complete claims processing, and (3) increased responsiveness to changing legislative and user requirements. Rather, the Compensation and Pension processing software has poor design and inadequate controls, resulting in processing errors and increased maintenance costs.

Various factors have contributed to the processing software's not being redesigned. They include giving priority to regional office automation; converting the existing software to operate on new hardware; implementing software changes resulting from new

legislation; and performing limited planning to accomplish the software redesign. In 1985, VA developed and approved a new modernization plan (the McManis report) to remedy problems with its benefit-delivery systems, including the Compensation and Pension system. This 6-year plan (whose implementation cost is estimated at $140 million) includes hardware, software, and management initiatives. For fiscal year 1986, VA reallocated $7 million of its budget for these initiatives. Because the new plan contains activities directed at resolving long-standing software problems, we are making no recommendations in this report.

Our review, which was completed in April 1986, was directed at determining the extent that the Target project modernized the Compensation and Pension system. Specifically, we reviewed VA's automation of the claims functions at several regional offices and identified the extent that the Target project modernized the Compensation and Pension processing software at the Hines Center. Management decisions related to the Compensation and Pension software and the Target project's implementation were discussed with officials from VA's Department of Veterans Benefits and the Office of Data Management and Telecommunications. Further details on our objectives, scope, and methodology are contained in the appendix.

In accordance with your wishes, we did not request the Veterans Administration to review and comment officially on a draft of this report. Should you desire additional information on our work, please contact me on 275-4659.

Copies of this report are being sent to the Director, Office of Management and Budget; the Administrators of Veterans Affairs and the General Services Administration; and to other interested parties upon request.

Sincerely yours,

Melroy D. (Joe) Quasney
Associate Director

BRIEFING REPORT ON VA's COMPENSATION AND PENSION BENEFIT PAYMENT SYSTEM

The Chairman, House Committee on Veterans' Affairs, asked us to review the extent to which VA had modernized its Compensation and Pension system through the Target project. Our objectives were to determine if VA achieved

--automation of claims authorization and inquiry functions in the regional offices; and

--redesign of the Compensation and Pension processing software to improve processing times, controls, and response to legislative requirements.

We also included in our review the agency's October 1985 modernization plan because it delineates the expected overhaul of VA's benefit-delivery systems (including the Compensation and Pension system) and resolution of long-standing software problems. The enclosed appendix details our objectives, scope, and methodology.

VA's ORGANIZATION AND ITS COMPENSATION AND PENSION BENEFIT-DELIVERY NETWORK

VA is divided into medical, benefit, and burial programs. The Department of Veterans Benefits (hereafter Benefits Department) is responsible for administering benefit programs, including life insurance, insured housing loans, and compensation, pension, and education benefits. Compensation and Pension benefits, the largest program, comprises over half of the agency's budget ($14 billion of $26 billion in fiscal year 1985). About 4 million veterans and their dependents receive Compensation and Pension payments annually.

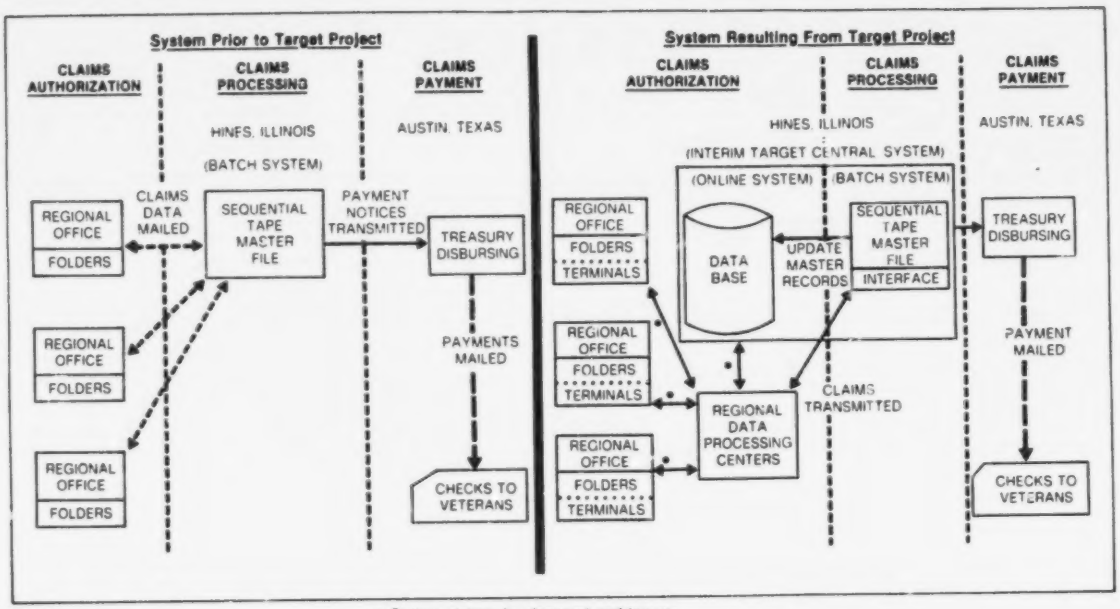
VA's network for delivering Compensation and Pension benefits consists of three operations: authorization, processing, and payment. The regional offices authorize these claims benefits on the basis of policies and procedures developed by the Benefits Department. Regional offices transmit claims data for processing to the agency's Data Processing Center at Hines, Illinois. Here an automated system maintains master records on veterans and their dependents and calculates payment amounts. After processing, the Hines Center forwards payment notices to the Department of the Treasury (in Austin, Texas), which issues benefit checks to veterans monthly.

HISTORY OF THE TARGET PROJECT

VA initiated the Target project in 1972 to improve service and operations by automating manual functions and upgrading outdated automation processes. The Target project became a formal "policy goal" in July 1972 and the resulting system was declared fully

operational in 1982. A comparison of networks for delivering Compensation and Pension benefits before and resulting from the Target project appears below.

Figure 1: Comparison of VA C&P Benefit-Delivery Networks



• Online claims development and inquiry

Prior to 1972, VA recognized that service and operational improvements were needed in its claims authorization and processing activities. Initiating claims in regional offices was considered a slow, labor-intensive, and paper-bound process. Then, only the claims payment process at the Hines Center was automated. Regional offices transmitted claims data generally by mail to the Hines Center, where staff entered the information on magnetic tape. Processing generally occurred in cycles several times a month, producing notices to the Treasury Department to disburse benefit checks. The processing software used at the Hines Center was initially installed in the late 1950s. Substantial revisions to the software resulted from implementing Vietnam-era legislation. Nevertheless, the software had problems with its design, controls, and documentation.

Between 1972 and 1977, various planning activities moved VA closer to implementing the Target project. In 1972, the VA Administrator approved the Target project to (1) automate regional offices, and (2) redesign the processing software at the Hines Center. Target project design documents were prepared in 1973. Between 1974 and 1976, VA piloted an automation of regional office

claims-authorization functions. VA changed its plans to redesign the processing software until 1983 because of uncertainties in timing and costs of implementation. The Interim Target Central System (hereafter Interim System) was then conceived to process claims on the existing, rather than the redesigned, processing software. Based on a more accurate assessment of requirements, the estimated cost of the Target project escalated during this period from $50 million to $100 million.

Implementation of the Target project occurred largely between 1977 and 1980. An equipment contract was awarded to Honeywell Information Systems in October 1977. The regional offices were then automated by installing computer terminals linked by a telecommunications network with one of three regional data processing centers and the Interim System at the Hines Center. The Interim System consisted of two data bases--one for access by regional offices for claims development and inquiry (online data base), and another for processing electronically transmitted and other types of claims data (batch processing master file). Dual equipment (IBM and Honeywell) processed claims data until the existing processing software was converted from IBM to Honeywell operation. Some initial software redesign work costing $1 million was undertaken by two contractors in 1978 and 1979.

Since the implementation of the Target project in 1980, VA upgraded the Honeywell computers several times to help resolve capacity problems; the agency also implemented additional functions to the claims authorization system for regional office use. Although in 1981 the Compensation and Pension software redesign remained a goal, it was further delayed until 1986 so that additional software (to implement new education legislation) could be developed and installed. Prior to the Target cost reports being discontinued, VA reported $150 million in costs through 1983 for the Target project. Of this amount, $82.4 million was allocated for development, $68.1 million for operations. In 1985, VA disclosed a new 6-year, $140-million modernization plan (the McManis plan) to remedy problems with its benefit-delivery systems, including the Compensation and Pension system.

VA's ACCOMPLISHMENTS UNDER THE TARGET PROJECT

Target project objectives were to improve service and operations through automating regional offices and modernizing the Hines Center's data processing functions. VA automated its regional offices, resulting in faster response to inquiries and reduced time to prepare claims. After the equipment contract award to Honeywell in October 1977, VA established an electronic claims input and retrieval system to replace the mailing of claims data to and from the Hines Center. New software was installed, enabling regional offices to develop, edit, and transit claims data for processing. The Interim System included development of a data base that gave regional offices direct access to veterans' master record data for inquiry purposes.

Another part of the Interim System was the claims processing software and the tape master file. VA expected, by 1983, to redesign the Interim System's software and to eliminate its claims processing tape master file, and use a more efficient data base system to process claims. However, the agency continues to use the Interim System for claims processing. Consequently, VA has not realized the anticipated benefits from the Target project. These include improved claims processing times, better controls over claims processing, and a software more responsive to change.

Various factors have limited VA in making the needed improvements to the Compensation and Pension processing software. Among them are: emphasis on regional office automation efforts; conversion of the processing software to operate on new hardware; implementation of software changes that resulted from new legislation; and absence of definitive planning to achieve software redesign.

In October 1985, VA devised a new modernization program to remedy long-standing problems with its benefit-delivery systems, including the Compensation and Pension system. This program is directed at: changing organizational responsibilities for benefit systems; improving software development and maintenance; and restructuring systems for providing benefits. GSA, in a recent draft report on VA's computer management, expressed concern about the thoroughness of the planning for the program. Although the plan for the new modernization program was developed at a strategic level, more detailed planning for the program's implementation is required, VA officials acknowledge.

In the following sections, we discuss the unrealized benefits from the Target project, factors limiting the processing software's redesign and improvement, and modernization plan activities.

ANTICIPATED BENEFITS OF SOFTWARE REDESIGN NOT REALIZED

While VA has enhanced its regional-office operations, through automation, the benefits of redesigning the Compensation and Pension processing software have yet to be realized. These benefits include

--claims data that are processed daily rather than several times a month;

--controls that ensure complete and accurate claims data processing; and

--software that is responsive to legislative and user changes.

Daily processing of claims data not performed

The Target project was expected to reduce claims data processing time from several times a month to daily. VA planned to

achieve this through development of a data base system and redesign of the processing software, eliminating the tape master file as the processing medium. A data base system using direct access storage devices was necessary to provide access to veterans' records and to efficiently process claims data. In a data base system, records can be maintained on storage devices, called disks, that allow direct access to records without regard to the location of other records. In contrast, the tape master file maintains records sequentially on reels of magnetic tape; accessing the records occurs by reading through the reels until the correct record is found. Thus, changing the records involves reading through all 5 million records (50 reels of magnetic tape) even though about one percent of them require changing.

Daily processing of claims data has not yet occurred although VA has implemented a data base system that allows regional offices direct access to veterans' master records. Processing continues to occur eight times a month on the tape master file because VA has not redesigned the Compensation and Pension processing software to operate either on the disk data base or on a daily basis. Compensation and Pension software would need modification to directly access veterans' master records in the data base and perform processing functions. In effect, VA is still operating its Interim System, which was expected to be replaced in 1983.

Processing claims data several times a month means that regional offices may lack current information for inquiry purposes: the time lag between updates of the master records can be as much as 10 days. In addition, by storing records in both the data base and the tape master file, VA has duplicative information on veterans; this increases maintenance and creates a potential problem in guaranteeing that the same records contain the same data.

Weak controls cause incomplete claims processing

The Target project was expected to add control features during the software redesign. Deficiencies in computer controls had been an underlying cause of past system problems. Principal controls included complete and accurate processing of claims data, the correct computation of the benefit amounts, and proper maintenance of master records.

Controls are important in a benefit-payment system in preventing fraudulent or erroneous payments. VA's Inspector General concluded in a May 1984 report,[1] that existing controls did not ensure that (1) all Compensation and Pension claims data submitted by the regional offices were actually processed, or (2) that unauthorized claims data were neither added nor created during processing. A control to ensure that all authorized claims data

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[1]Audit of the Compensation and Pension Automated System, VA Office of Inspector General, Report No. 4AD-G07-049, May 23, 1984.

are processed is to balance the total number of data submitted by regional offices and the total number processed. As the Inspector General reported, this control measure was not implemented. According to the Hines Center officials, balancing regional office and processing totals was not possible because regional-office data are reformatted into several sets of data during processing, causing the figures not to equal. Since regional offices are informed only about rejected data, there is no effective means of ensuring all data are processed. The redesign was supposed to eliminate the reformatting of claims data and provide effective controls.

Specific instances of incomplete processing, some serious, have been reported because of the inadequacy of controls. One example was the erroneous issuance of over $4.4 million in veterans' checks because of a recurring instance of incomplete data processing in 1983 and 1984. VA had no specific controls to detect that the claims data were completely processed. According to the Hines Center division manager, control totals for the data were not established nor were the data separately counted during processing. While researching an unrelated problem, the Hines Center accidentally discovered the incomplete processing over a month after it happened.

Another example, also in 1984, showed about 15,000 submissions of claims data that did not process, of which 20 percent resulted in overpayments of an unknown value. Again, there was no effective means of detecting the problem. The division chief stated that adequate check points had not been programmed to record that the data were being processed.

Poor software quality limits responsiveness to change

VA has always needed Compensation and Pension processing software that could be easily modified. Prior to the Target project, the software's quality did not allow for efficient or effective changes. A Target objective, therefore, was to have software that was easy to change and maintain in response to legislative requirements. However, this objective was not accomplished because the redesign was not carried out. The software has unnecessarily complex logic, is poorly constructed and inadequately documented, and lacks standard data definitions.

Regarding the software's complexity and construction, a VA consultant's (Peat, Marwick, Mitchell & Company) analysis in March 1985 showed that most of the software was complex and of poor architecture (construction), making software changes difficult. According to Peat Marwick, complexity indicates how difficult a program's logic is to follow; and architecture is how a program's logic is structured. The architecture of only 8 of the 221 Compensation and Pension programs was considered acceptable by this

contractor. These programs were considered well constructed based on structured programming techniques.[2] These techniques make it easier to read the software, thereby facilitating any changes.

The analysis showed that of the 213 poorly constructed programs, 69 were also complex. These 69 programs, moreover, represented 75 percent of the procedural lines of code of the processing software and most of its critical functions. According to the contractor's report the complexity was due to the excessive number of logic paths. In one program, for example, the logic contained 85 levels at which an action could be executed. To identify where a change should be made, a programmer might have to follow the logic through 85 levels.

The Peat Marwick report also stated that names for data elements were used inconsistently between programs, adding to the maintenance burden imposed by the software's poor quality. The National Bureau of Standards recommends developing a standard set of data element definitions to specify the name, purpose, and content of each data element in the system. So doing facilitates comprehension of computer programs and avoids conflict and redundancy. Hines Center management acknowledged that data definitions were not standardized and that this issue was being addressed. For example, the Hines Center was developing a data dictionary that would incorporate standard definitions for data elements.

The Compensation and Pension software contained inadequate documentation: it did not effectively communicate what the existing system is supposed to do and how, thereby increasing the difficulty to maintain the software. Documentation--narrative descriptions, logic flows, file layouts, and test results--was unavailable in four critical programs of the Compensation and Pension system we reviewed. Without documentation, programmers spent unnecessary time and effort learning about the program. During our review, the Hines Center director and associate director acknowledged that the Compensation and Pension processing software lacked adequate documentation. This lack caused VA to report in its December 31, 1985, Federal Manager's Financial Integrity Act report that outputs from the Compensation and Pension system may not be reliable or complete because they were not products of a documented system.

There was consensus among Hines Center management and staff that the poor quality of the software caused both increased time to make changes and errors in processing. One analyst estimated that, based on her previous employment where the software was well documented, she needed 30 percent more time to change the

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[2]Structured programming is a method of building computer programs using a basic set of control structures such as top-down design, one entry and one exit to the program, and a single function for each program.

Compensation and Pension software because documentation was inadequate. Another analyst responsible for the Compensation and Pension software that updated veterans' master records estimated that she spent 25 percent of her time researching and correcting errors from prior changes to the software. The division manager concurred in these estimates. Our analysis of fiscal year 1984 Compensation and Pension programming assignments showed that a third of the assignments and a fourth of the programmers' time were used to fix errors caused by previous changes to the software. Using these figures, we calculated that the Hines Center spent over $500,000 just to correct changes previously made to the software.

According to a Hines Center division manager, the processing software's poor quality required more staff (56 people) for maintenance than did the claims authorization software (25 people) despite their having similar amounts of lines of code. Our review of the claims authorization software programs showed them to be well documented and structured, causing fewer errors and requiring less time to fix problems.

FACTORS LIMITING REDESIGN OF PROCESSING SOFTWARE

The Compensation and Pension processing software was initially designed and programmed in 1959; the languages and design techniques used then for developing and maintaining systems are not considered acceptable today. Since then, the software has undergone extensive modification to incorporate changes and additions demanded by users and required by legislation. The considerable software modifications were done under short time frames and without restructuring the software's design and logic. Large, complicated programs whose logic could elude even the most experienced programmer resulted.

Although VA has long recognized the need to modernize the Compensation and Pension processing software and despite planned improvements (largely under the Target project), various factors have limited the processing software improvement. These include the

--priority given to regional-office automation efforts;

--resources used to convert software to operate on new hardware;

--delay due to implementing new education benefits legislation; and

--absence of definitive plans for the redesign.

Regional office automation given priority

In 1976, VA changed its software redesign plans under the Target project to a phased approach to avoid the costs and uncertainties of a complete redesign while automating the regional

offices. This phased redesign had a 1983 completion date. However, the agency continued to enhance the regional offices after their initial automation in 1980 rather than proceed with the redesign. During 1978 and 1979, about $1 million of the redesign's estimated $10-million cost was spent for two contractors to help design the new software. According to VA's Office of Data Management and Telecommunications Director, the remaining redesign funds were used to enhance regional-office automation functions. Many functions not part of the original Target project were added. These enhancements were emphasized, according to the Director, because the Benefits Department did not view the redesign as important and the Data Management Office was required to respond to the department's priorities. An official of the Benefits Department stated that redesign had always been a priority, but the department lacked control of resources and funding for changes to the software.

Considerable resources used for conversion

Because the equipment contract for the Target project was awarded to Honeywell Information Systems and the existing system used IBM equipment, a conversion of the software was necessary. As we reported in 1980,[3] VA spent more time and resources on the conversion than it planned. The agency estimated that the conversion would cost $1,244,280 for contract service plus 15 VA programmers for one year to support the contractor. Instead, VA spent nearly 2-1/2 years and $8.5 million converting its existing software. Contributing to the higher conversion costs was the need to rewrite many of the converted programs to achieve acceptable processing times on the new computer equipment, and to modify existing programs on the old computer in response to legislative changes. Our report concluded that VA could have

--saved $2.5 million by not converting, instead using the old system until the redesign was completed, and

--used its programmers (who had worked on the interim conversion) more productively by assigning them to the Target redesign.

Redesign delayed to implement new legislation

In a March 1981 House Appropriations Committee hearing, the agency stated that the processing software redesign was still a goal, but that it had been delayed to install new software that incorporates new education benefits legislation requirements. The redesign was to be phased in with the Compensation and Pension software next in development. VA implemented the legislation as

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[3]Conversion: A Costly, Disruptive Process That Must Be Considered When Buying Computers (GAO/FGMSD-80-35, June 3, 1980).

part of the regional-office authorization system. However, according to a VA Inspector General memorandum, the Data Management Office's expected completion date for the redesign was 1986.

Limited planning to achieve software redesign

Since 1981, VA's planning for the processing software redesign has not been definitive. The agency's fiscal year 1982 data processing plan did not mention the software's redesign. Although the Hines Center submitted a redesign proposal that year, the VA Central Office in Washington, D.C., did not consider it seriously, according to the Hines Center management. This was because the plan's required commitment of resources and time was unacceptable to the Benefits Department. Also in 1982, the agency made an agreement with GSA for assistance in developing a software improvement program for the Compensation and Pension software. VA and GSA officials could not explain why this project was never started. In 1983, the redesign appeared as a project in VA's automatic data processing plan. However, according to a Data Management Office official, the project was not a viable proposal because the redesign was only part of an exercise to produce an overall automatic data processing plan. Furthermore, the Benefits Department did not specify the project on its 1983 priority work list. In September 1984, before the House Subcommittee on Veterans' Affairs, the Benefits Department Director stated that some work to provide daily processing of claims data was beginning. In 1984 VA hired Peat Marwick to analyze the processing software. Despite Peat Marwick's reporting in March 1985 of serious software problems, VA has not yet contracted to improve the processing software.

Since 1984, the Hines Center has performed some work to improve the processing software. For example, the Hines Center has restructured several programs, documented some processing functions, and developed certain data-naming standards. A Hines Center division manager said that at the present rate the improvements, which occur only when staff are available, would take 10 years to complete. The manager indicated that substantive changes to the software might come more quickly under the agency's new modernization plan for benefit-delivery systems.

VA's NEW MODERNIZATION PLAN

In October 1985, McManis Associates Inc., provided a plan to VA for a 6-year, $140-million modernization program for the benefit-delivery systems, including the Compensation and Pension system. The plan was requested in response to the Administrator's March 1985 policy statement mandating full modernization of VA's data processing and telecommunications systems to improve service to veterans and their families. The plan, which was developed in cooperation with the Benefits Department, estimated spending $95 million for computer-related equipment and $46 million for software-related activities. Although the Congress did not approve funding in fiscal year 1986 for the modernization initiatives, VA

reallocated $7 million from its overall budget to begin the modernization effort. The Office of Management and Budget has approved $25 million in VA's fiscal year 1987 budget request for modernization activities.

The modernization plan states that the Benefits Department's current systems require a major overhaul because "outmoded hardware, software, and telecommunications technologies are expensive and limit data access and analysis capabilities.... Over time, there has been such massive modification to the Compensation and Pension software that maintenance of that system is now enormously costly, and the agency is increasingly at risk in trying to maintain it in its present form."

The plan is expected to produce major changes in how the department delivers service to veterans. It will introduce operational efficiencies by focusing on three major issues: (1) organizational responsibilities for its systems, (2) software management, and (3) systems restructuring.

Organizational responsibilities

Because of unclear responsibilities for system changes, the modernization plan recommended a reorganization to better control development and maintenance activity for all benefit systems. Until recently, the Benefits Department and the Data Management Office had certain responsibilities for these activities. In April 1986, the Congress approved the transfer of over 350 positions from the Data Management Office to the Benefits Department. The reorganization gave the Benefits Department direct responsibility for management of all phases of systems work including design, development, implementation of new systems, and maintenance of existing systems. The department has established the ADP Systems Management office to perform these new responsibilities.

An April 1986 draft GSA report[4] expressed concern for the lack of detailed planning for implementing the reorganization. GSA's review, conducted between November 1985 and March 1986, was an overall assessment of VA's management and acquisition of information resources. To avoid repeating some of the "organization missteps" that occurred when VA's Medical Department received control of systems responsibilities in 1982, GSA recommended that a detailed implementation plan be developed for passing systems responsibilities to the Benefits Department. VA officials acknowledged that the 1985 modernization plan was basically a strategic document and required additional planning for its effective implementation.

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[4]Procurement Management Review, Veterans Administration, FY 1986, U.S. General Services Administration, Information Resources Management Services, April 10, 1986.

Software management

Concerning the software management issue, the plan stated that two areas require attention: (1) how software is developed and maintained, and (2) how data are managed. Present methods, techniques, and tools by which benefit systems' software were developed and supported throughout the life cycle were considered generally obsolete and cumbersome. The plan states that large savings in developing and maintaining the benefit systems could result from improving the methods used in systems design, programming, and maintenance. Because the existing systems presented severe obstacles to employing modern tools, the plan also suggested initial improvements in the software's structure and coding.

The benefits systems' overlapping and inconsistent data bases were a major barrier to coordinated, responsive service. The plan, therefore, recommended that a data base administration function within the Benefits Department be established to consolidate benefit systems' data files consistent with agencywide data base development approaches.

VA plans to spend $400,000 of the $7 million reallocated for fiscal year 1986 to initiate activities for improving the software and standardizing the data.

System restructuring

According to the plan, VA's current benefit-delivery systems are built around inefficient centralized processing functions. The plan recommends restructuring the current systems by decentralizing portions of the centralized functions to the regional offices to take advantage of cost-effective and more efficient technology. Consequently, much of the plan's estimated cost is for computer-related equipment at the regional offices; this includes document-imaging equipment, office automation, and minicomputers. Moreover, to realize substantial payback, the plan states that up-front capital investment is necessary. Of the $95 million for equipment over the plan's 6 years, the plan proposes to both test and procure about $61 million of equipment within the first 3 years. VA's planned obligations in fiscal year 1986 for computer-related equipment and services amount to over $6 million of the $7 million reallocated.

Considerations in implementing the modernization plan

The plan called the new modernization effort ambitious and risky and identified factors critical to its success. They included:

--a top agency and department leadership commitment to the modernization goals by allocating the level of resources needed to carry them out;

--the effective employment of advanced technology to achieve service and efficiency improvements by changing how work is performed;

--a close working relationship between the Benefits Department and the Data Management and Telecommunications Office since the Office continues to have responsibility for agencywide automatic data processing and telecommunications policy and procedures;

--a suitable management structure in the Benefits Department to carry out the modernization program as the interdependencies of the program require continual monitoring.

At the request of the House and Senate Committees on Veterans' Affairs, we are reviewing the transfer of systems responsibility from VA's Data Management Office to its Benefits Department and its impact on data processing operations and systems modernization initiatives. We intend to provide periodic briefings and a final report for the spring 1987 oversight hearings.

CONCLUSIONS

In 1972, VA initiated the Target project to improve service and operation of its Compensation and Pension benefits system. The project was expected to extend automation capability to authorize benefit claims and modernize the existing automated system to process the claims for payment. Although the Target project added regional-office automation capabilities to the Compensation and Pension system, a critical part of the Target project--the modernization of the claims processing software--was not accomplished. VA planned to complete a phased redesign of the processing software by 1983. Various factors have obstructed this goal's achievement, including automation of regional-office functions, software conversion, implementation of new legislation, and limitations in planning. Consequently, VA has not capitalized on its Target investment, resulting in limited improvement in claims processing time, allowing incomplete processing of claims, and incurring increased costs to maintain the software. Further, since the quality of the software has not significantly changed since the Target project began, VA is at risk in trying to maintain the Compensation and Pension software in its present form.

Until 1985, VA's plans to remedy the problems with the Compensation and Pension processing software were not definitive; the agency put minimal effort into solving the software's chronic problems. The October 1985 modernization plan was developed to address problems with VA's benefit-delivery systems, including the Compensation and Pension system. With an estimated implementation cost of over $140 million, the plan outlines various initiatives to address hardware, software, and management issues. Although the plan emphasizes regional-office enhancements and the up-front

investment in hardware, it also clearly presents VA's software problems and postulates effective solutions, including improvements to the existing software and the establishment of an effective environment for systems development and maintenance.

OBJECTIVES, SCOPE, AND METHODOLOGY

Through his staff, the Chairman, House Committee on Veterans' Affairs, requested that we determine the extent to which the Compensation and Pension system had been modernized under the VA's Target project, initiated in 1972. The committee was concerned that the automated support originally intended under the Target project had not been fully implemented. On the basis of an examination of the original Target project plans and congressional hearings, we identified two overall activities to be accomplished by the Target project. The first was automation of claims authorization and inquiry functions at regional offices; the second was the redesign of the Compensation and Pension processing software at the data processing center in Hines, Illinois.

To determine the extent to which the Target project provided automated support for the regional offices, we visited two of VA's three Regional Data Processing centers (Los Angeles, California, and Hines, Illinois) and four of its 58 regional offices: Los Angeles; Baltimore, Maryland; Wilmington, Delaware; and Seattle, Washington. Our review was directed at confirming the type of equipment used to develop claims and the types of automated claims authorization activities. We inventoried the Target equipment and observed its use in developing and authorizing claims. Regional-office managers, adjudication staff, and veterans' organizations were interviewed on the technology's impact on service and operations.

In evaluating whether the Compensation and Pension processing software was modernized, our work was centered at the data processing center in Hines, Illinois, where the processing software is maintained. We examined four software programs critical to the processing of Compensation and Pension benefit claims. In reviewing these programs, we assessed the functional and technical adequacy of the software against modern practices, including Federal Information Processing standards and discussed the condition of the software with the Hines Center management and staff. We identified and reviewed other analyses on the software's condition; prime among these were studies by Peat, Marwick, Mitchell & Co., VA's Inspector General, and McManis Associates Inc. We identified problems the agency was experiencing with the processing software; this we did through discussions with Hines Center management and staff and by reviewing internal documents, such as systems incident and rerun reports, "white papers," and programming assignments related to fixing system errors.

We interviewed VA officials at the Hines Center and at the Central Office in Washington, D.C., to determine the reasons for the level of accomplishment under the Target project. In addition, we reviewed and discussed documentation with appropriate officials to identify activities related to improving the software; included were Target implementation reports, reports by redesign

contractors, automatic data processing plans, priority listings of system work, proposals for redesign by the Hines Center, an agreement with GSA's Federal Conversion Support Center, and Hines Center project assignments. Our review was completed in April 1986.

Our report discusses VA's 1985 modernization plan (prepared by the contractor, McManis Associates Inc.) because it contained activities directed at resolving Compensation and Pension software problems. We did not perform a substantive review of the plan, but discussed it in general with officials from the Benefits Department, the Data Management and Telecommunications Office, and the Hines Center to determine the level of detailed planning and implementation. We also reviewed GSA's April 1986 draft report of VA's procurement management for factors related to the planning and implementation of the modernization program.

The views of directly responsible officials were sought during the course of our work and are incorporated in the report where appropriate. In accordance with the requestor's wishes, we did not request the Veterans Administration to review and comment officially on a draft of this report.

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